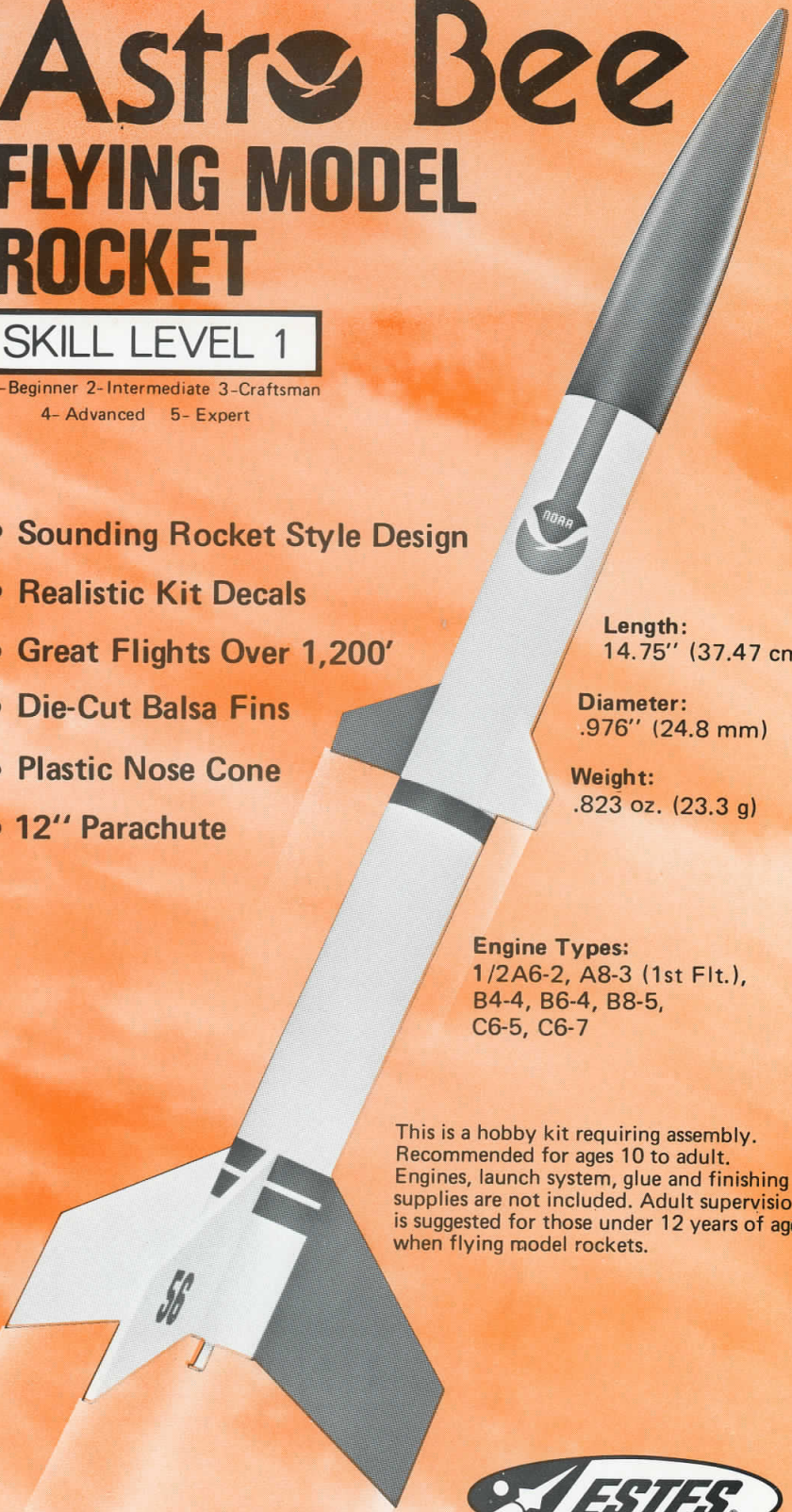
Astro Bee

FLYING MODEL ROCKET

SKILL LEVEL 1

1-Beginner 2-Intermediate 3-Craftsman
4-Advanced 5-Expert

- Sounding Rocket Style Design
- Realistic Kit Decals
- Great Flights Over 1,200'
- Die-Cut Balsa Fins
- Plastic Nose Cone
- 12" Parachute



Length:
14.75" (37.47 cm)

Diameter:
.976" (24.8 mm)

Weight:
.823 oz. (23.3 g)

Engine Types:
1/2A6-2, A8-3 (1st Flt.),
B4-4, B6-4, B8-5,
C6-5, C6-7

This is a hobby kit requiring assembly. Recommended for ages 10 to adult. Engines, launch system, glue and finishing supplies are not included. Adult supervision is suggested for those under 12 years of age when flying model rockets.

ESTES®

A DAMON COMPANY

ESTES INDUSTRIES
PENROSE, CO 81240 USA

1356

Astro Bee

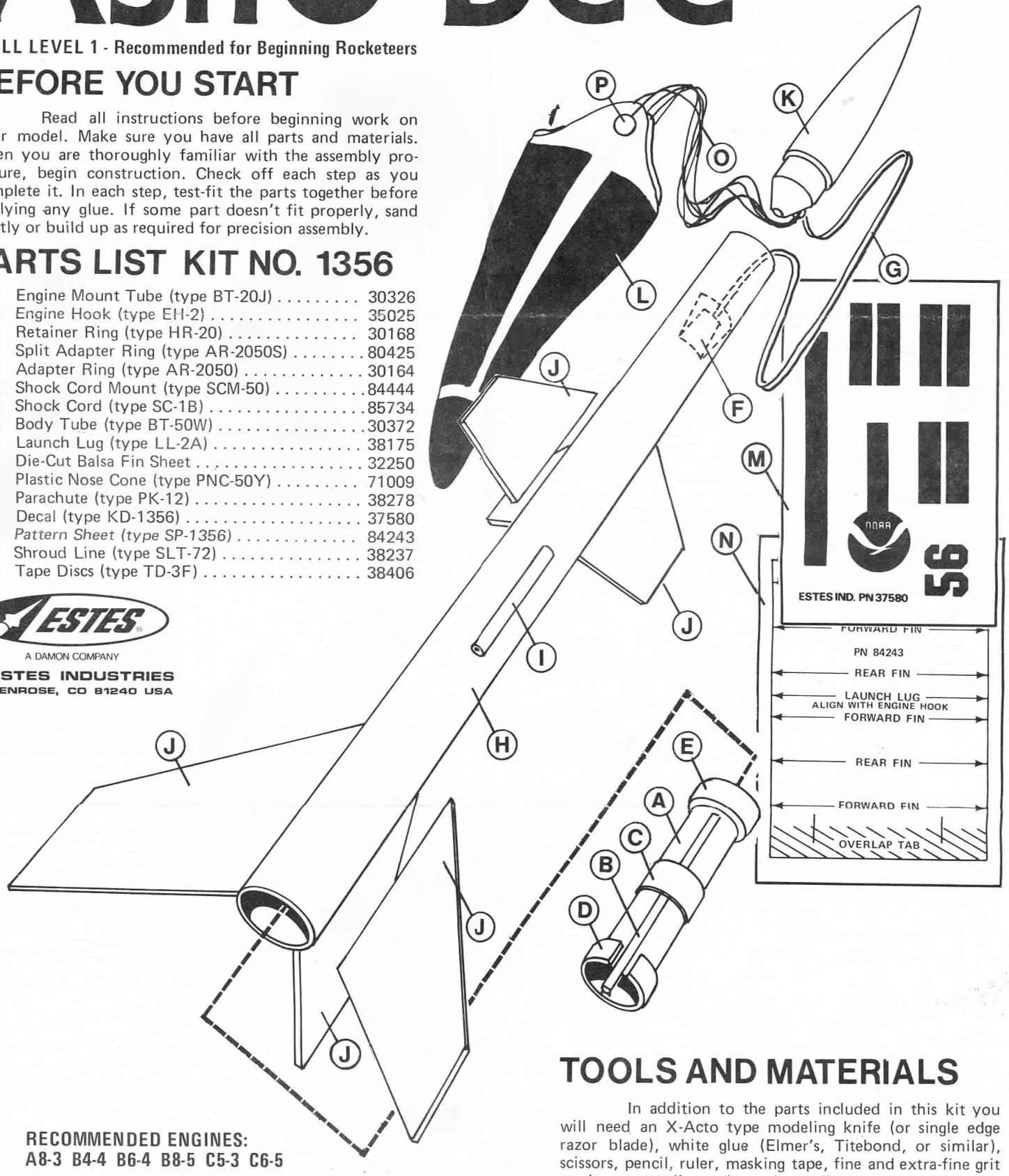
SKILL LEVEL 1 - Recommended for Beginning Rocketeers

BEFORE YOU START

Read all instructions before beginning work on your model. Make sure you have all parts and materials. When you are thoroughly familiar with the assembly procedure, begin construction. Check off each step as you complete it. In each step, test-fit the parts together before applying any glue. If some part doesn't fit properly, sand lightly or build up as required for precision assembly.

PARTS LIST KIT NO. 1356

A	1	Engine Mount Tube (type BT-20J)	30326
B	*1*	*Engine Hook (type EH-2)*	35025
C	1	Retainer Ring (type HR-20)	30168
D	1	Split Adapter Ring (type AR-2050S)	80425
E	1	Adapter Ring (type AR-2050)	30164
F	1	Shock Cord Mount (type SCM-50)	84444
G	1	Shock Cord (type SC-1B)	85734
H	1	Body Tube (type BT-50W)	30372
I	1	Launch Lug (type LL-2A)	38175
J	1	Die-Cut Balsa Fin Sheet	32250
K	1	Plastic Nose Cone (type PNC-50Y)	71009
L	1	Parachute (type PK-12)	38278
M	1	Decal (type KD-1356)	37580
N	*1*	*Pattern Sheet (type SP-1356)*	84243
O	1	Shroud Line (type SLT-72)	38237
P	1	Tape Discs (type TD-3F)	38406



ESTES
A DAMON COMPANY
ESTES INDUSTRIES
PENROSE, CO 81240 USA

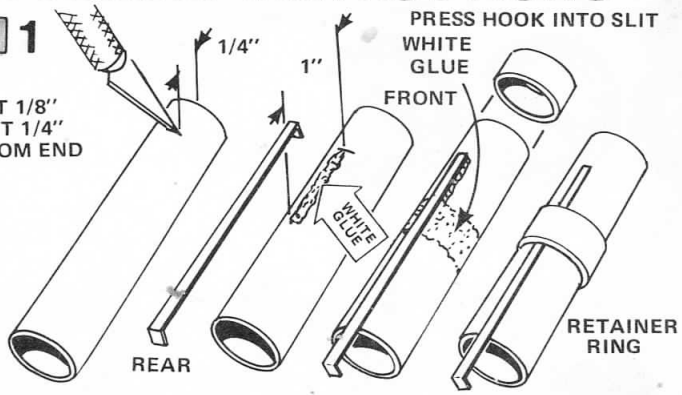
RECOMMENDED ENGINES:
A8-3 B4-4 B6-4 B8-5 C5-3 C6-5

TOOLS AND MATERIALS

In addition to the parts included in this kit you will need an X-Acto type modeling knife (or single edge razor blade), white glue (Elmer's, Titebond, or similar), scissors, pencil, ruler, masking tape, fine and extra-fine grit sandpaper, sanding sealer and a medium-size modeling paint brush. To paint your model we recommend gloss white and insignia blue enamel spray paint.

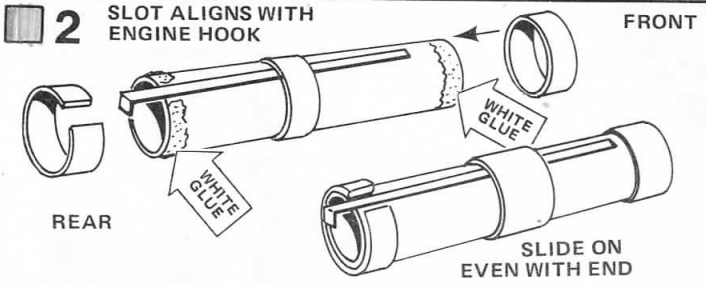
ASSEMBLY INSTRUCTIONS

1



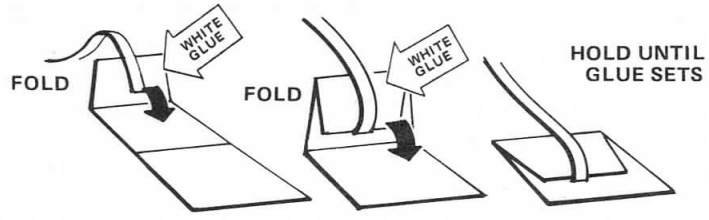
Cut a 1/8" long slit in the engine mount tube (part A), 1/4" from one end as shown. Apply a 1" long line of glue to the tube as shown. Push one end of the engine hook (part B) into the slit and press the main part of the hook into the glue. Apply a line of glue around the middle of the tube and slide the hook retainer ring (part C) over tube and hook and onto the glue.

2



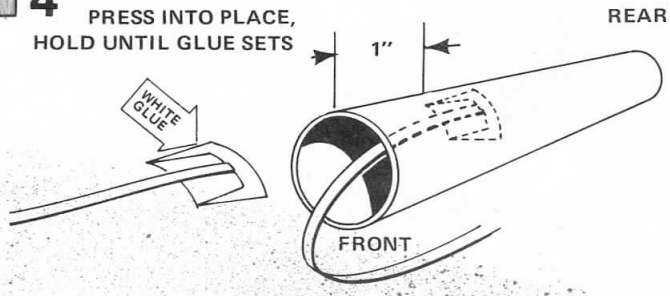
Glue the split centering ring (part D) to the engine mount tube even with the rear end (the end with the over-hanging hook) so the slot is over the hook. Avoid getting glue in the slot. Glue the other ring (part E) to the front of the engine mount against the end of the hook as shown.

3



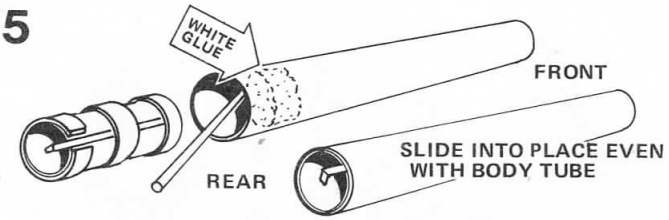
Cut out the shock cord mount (part F). Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part G) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section (2). Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue dries.

4



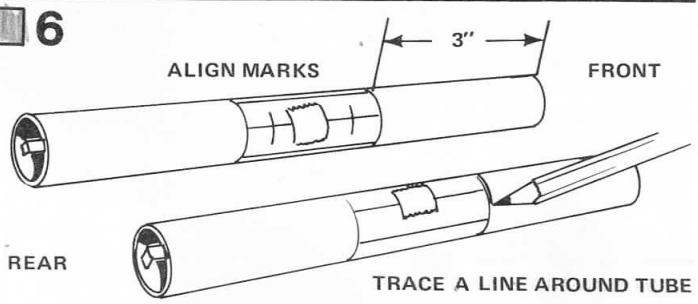
Smear glue over the entire back side of the shock cord mount. Hold the mount as shown and press it into place inside the end of the rocket body tube (part H). Make sure the front of the mount is at least 1" from the end of the tube. Hold the mount in place until the glue dries.

5



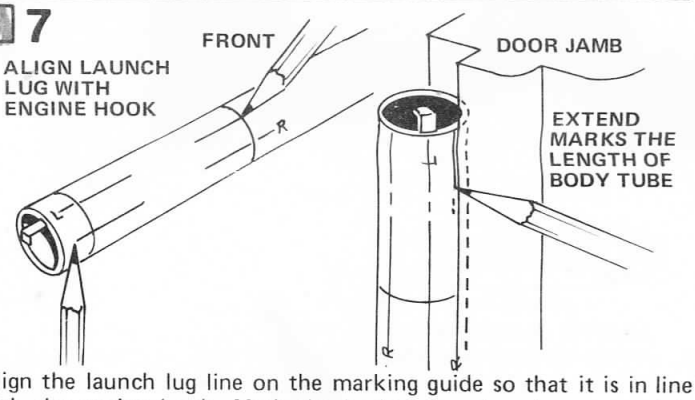
Smear glue around the inside of one end of the body tube to cover an area about 2" to 2-1/2" from the end of the tube. A stick or dowel may be used as shown. Immediately insert the engine mount unit, being careful to position it so the engine hook will stick out of the end of the tube. Push engine mount in with one smooth motion until the ends of the tubes (and split ring) are even.

6



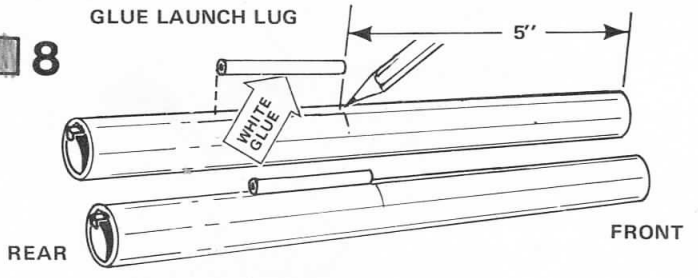
Cut out the body tube marking guide from the pattern sheet (part N). Wrap it around the body tube. Match the printed guide marks and tape guide ends together. Mark the tube 3" from the front. Use the edge of the marking guide to trace a line around the body tube at the mark.

7



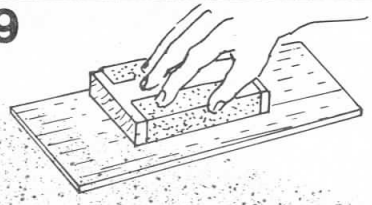
Align the launch lug line on the marking guide so that it is in line with the engine hook. Mark the body tube at each arrow point. Mark the rear fin lines with an "R" and the forward fin lines with an "F". Mark the launch lug line with an "L". Remove the guide. Place the body tube against the inside edge of a door frame as shown. Draw a line from the tube end through *each tube mark*. Draw all lines the entire length of the tube.

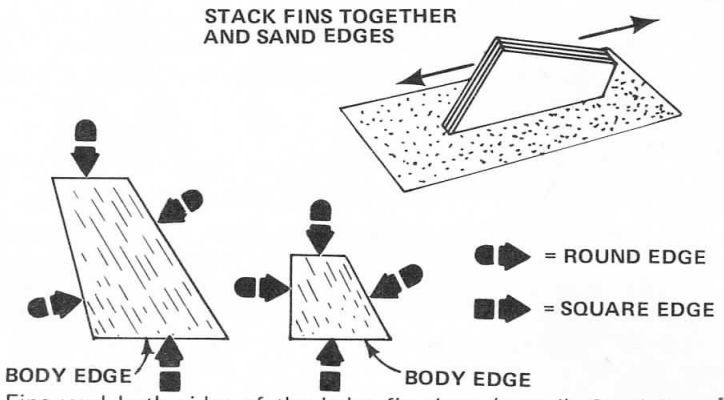
8



Measure 5" from the front on the launch lug line. Glue the launch lug (part I) on the line so that the front of the launch lug is at the 5" mark. Align the launch lug straight along the body tube.

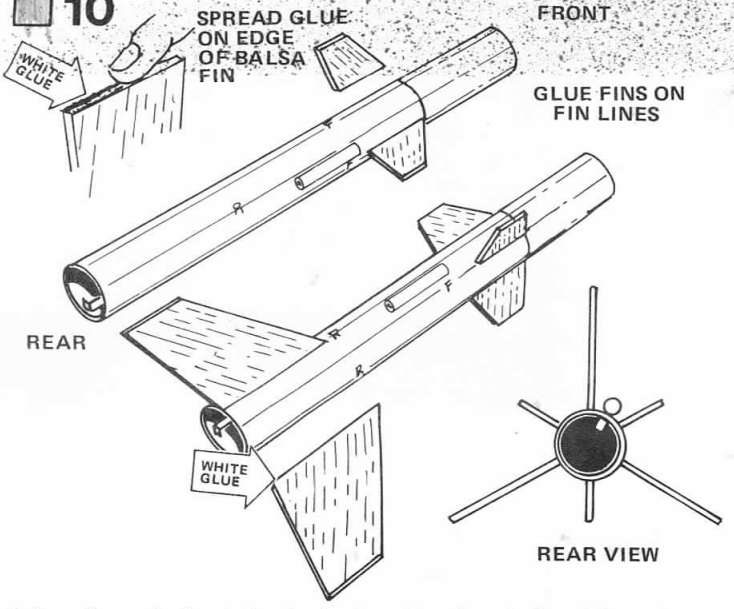
9





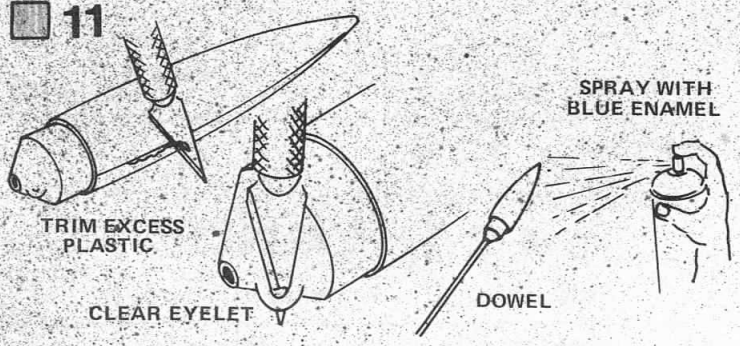
Fine-sand both sides of the balsa fin sheet (part J). Carefully remove the fins from the sheet. Use a sharp knife to cut free the corners and edges. Stack the large and small fins and sand as shown. Sand round each fin edge except the body edge. The body edge must be square.

☐ 10



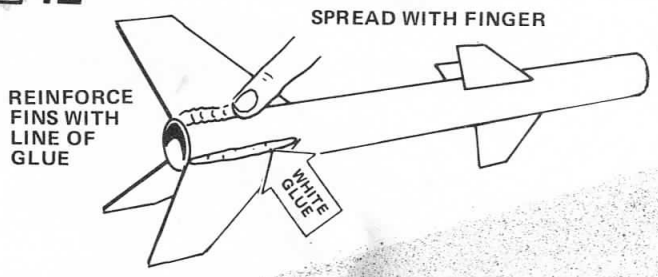
Rub a line of glue into the body edge of each fin. Allow glue to dry. Glue the small forward fins to the body tube on the guide lines marked "F" so that the leading edge is on the tube line drawn in Step 8. Refer to the illustration to be sure you position the fins correctly. Adjust the fins so they project straight away from the body. Glue the large rear fins to the body on the guide lines marked "R". The rear of each fin should be even with the rear of the body tube. Again, adjust the fins so that they project straight away from the body. Do not set the rocket on its fins while the glue is wet.

☐ 11



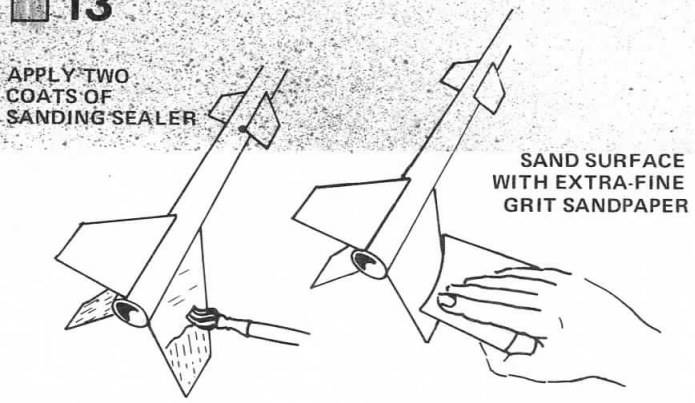
Trim or sand any excess plastic from around the sides of the nose cone (part K). Use a sharp knife to remove any excess plastic from the inside of the molded eyelet at the rear of the nose cone. Wash the nose cone in lukewarm soapy water, rinse well, and dry. Spray paint the nose cone with several light coats of insignia blue paint. The nose cone can be supported by a dowel or stick inserted in the center opening in the nose cone while being painted and drying.

☐ 12



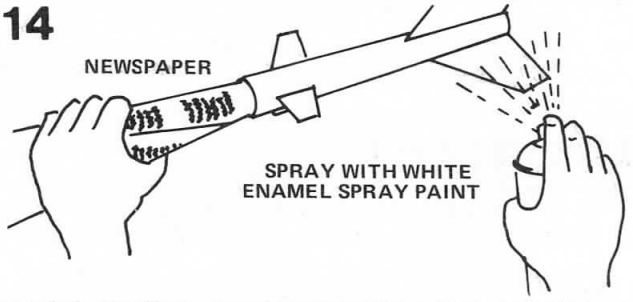
When the fin joints and launch lug have dried, apply a glue reinforcement (called a glue "fillet") to each joint. Hold the model level and apply a line of glue to both sides of each joint. Smooth out the glue with your finger. IMPORTANT -- Keep the model level until the glue dries completely.

☐ 13



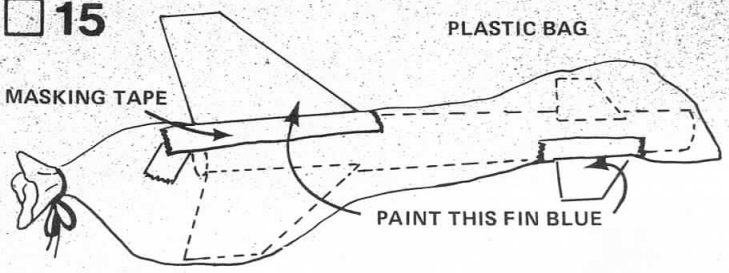
When all the glue on the model is dry, prepare the balsa fins for painting. Apply at least two coats of sanding sealer to all balsa surfaces. Let dry and sand thoroughly with extra-fine grit sandpaper after each coat. Do this until all the tiny grain lines in the wood are filled and everything looks and feels smooth.

☐ 14



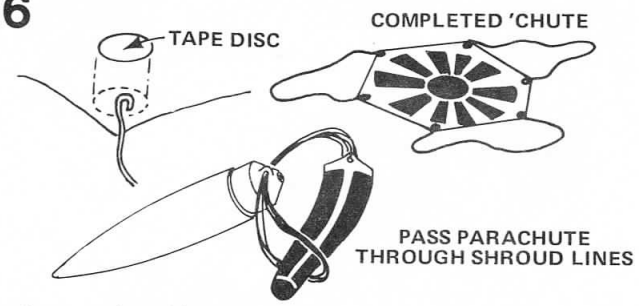
Insert a sheet of rolled-up newspaper or heavy paper into the rocket body tube as shown. Apply two or three light coats of gloss white spray enamel to the entire unit. Allow each coat to dry throughly before applying the next coat.

☐ 15



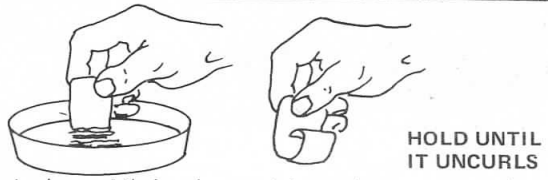
After the model has completely dried, (overnight is best) paint both sides of one large rear fin and the small forward fin opposite to the large fin, insignia blue. The plastic packing bag can be used to protect the model. Cut a slit on the open end to allow one rear fin to stick out and another slit towards the middle on the opposite side for the small fin. Use masking tape around both fins to seal the bag opening. Rub a hard object (such as a coin) along the fin edges to be sure the tape is firmly sealed.

☐ 16



Cut out the parachute (part L) on its edge lines. Cut three 24" lengths of shroud line (part O). Attach line ends to the top of the parachute with tape discs (part P) as shown. Pass the shroud line loops through the eyelet on the nose cone. Pass the parachute through the loop ends and pull the lines tight against the eyelet. Set the knot with a drop of glue. Tie the free end of the shock cord to the eyelet.

☐ 17



Apply the decals (part M) in the positions shown on package panel. To apply decals, cut out a decal section and dip it in luke-warm water for 20 seconds. Hold decal until it starts to uncurl or slides easily on the backing sheet. Use a small brush to "wet" the model surface where decal will be applied. Slide decal off the backing sheet and onto model. Blot excess water away with a damp cloth. Allow decaled model to dry overnight. Apply a final light coat of gloss clear spray enamel over decaled areas to protect the decals.

LAUNCHING COMPONENTS

To launch your rocket you will need the following items:
An Estes model rocket launch system
Parachute recovery wadding (Estes Cat. No. 2274)
Estes A8-3, B4-4, B6-4, B8-5, C5-3, or C6-5 model rocket engines. Use an A8-3 or B4-4 engine for your first flight.

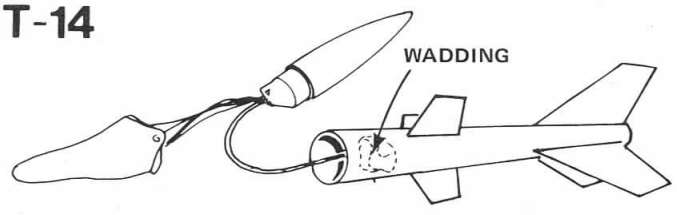
IMPORTANT:

Be sure to follow the HIAA-NAR* Model Rocket Safety Code when carrying out your model rocket activities.

*HIAA -- Hobby Industry Association of America
NAR -- National Association of Rocketry

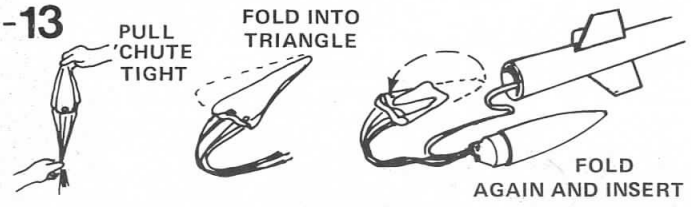
COUNTDOWN CHECKLIST

T-14



Pack 4 or 5 squares of loosely crumpled recovery wadding into the rocket body.

T-13



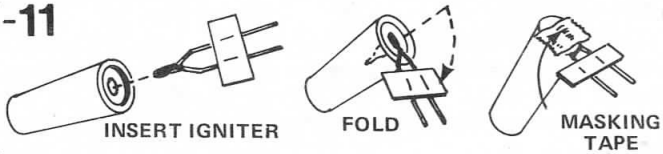
Gather the parachute as shown, then fold into a triangular shape. Fold again and insert into rocket body.

NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight especially in cold weather.

T-12 Pack parachute, shroud lines, and shock cord neatly into rocket body. Slide nose cone into place.

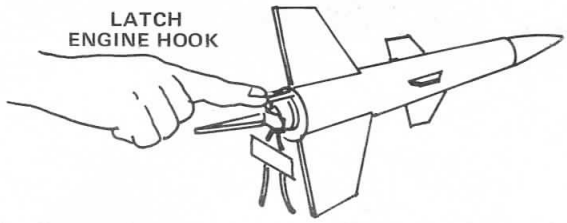
Nose cone should separate easily from rocket body tube, but should not be extremely loose. If fit is too tight, sand inside of body tube and shoulder of nose cone with fine sandpaper. If fit is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.

T-11



Select an engine and install an igniter as directed in the engine instructions. Use an A8-3 or B4-4 engine for your first flight.

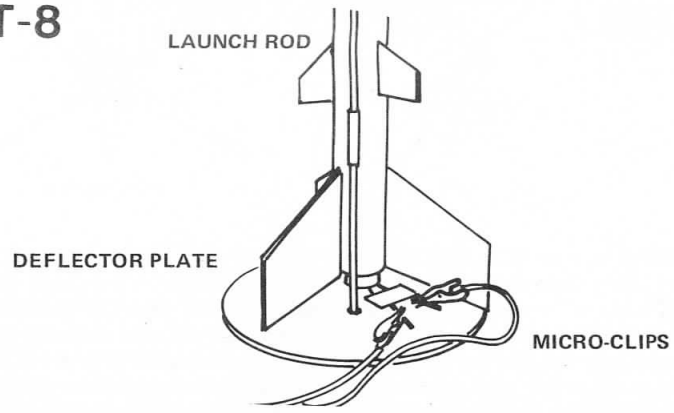
T-10



Insert engine into rocket engine mount. Engine hook must latch securely over end of engine.

T-9 Disarm the launch panel -- REMOVE SAFETY KEY!

T-8



Slide launch rod through rocket launch lug and place rocket on launch pad. Make sure the rocket slides freely on the launch rod. Clean the micro-clips and attach them to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to engine as possible.

T-7 Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

T-6 Arm the launch panel -- INSERT SAFETY KEY!

-5-4-3-2-1-LAUNCH!!

Repeat Countdown Checklist for each flight.

MISFIRE PROCEDURE

Occasionally the igniter will heat and burn into two pieces without igniting the engine. This is almost always caused by a failure to install it correctly. REMOVE SAFETY KEY from launch panel, remove the model, clean the igniter residue from the engine nozzle, and install a new igniter. Repeat the Countdown Checklist.